

## AMENDMENTS

### In the specification

Please change the title from "AUTOMATED DNA SEQUENCING TECHNIQUE" to  
--TAGGED EXTENDIBLE PRIMERS AND EXTENSION PRODUCTS--.

### In the claims

Please amend claims 75-77, 88, 98-103, 106-107, 111, 118-123 and 133-138, as follows.

C1  
1. ~~75.~~ (Thrice amended) A duplex comprising an oligonucleotide primer and a template, wherein the primer is covalently coupled [chemically] to a chromophore or fluorophore so as to allow chain extension by a polymerase.

C2 Sub IT  
76. (Thrice Amended) [The] A duplex [of claim 75, further] comprising a template and an extended primer, produced by providing a duplex according to claim 75 and extending the primer with a polymerase. [the primer extended by the polymerase and hybridized to the template.]

77. (Thrice amended) [An] A single-stranded oligonucleotide [comprising] produced by separating the extended primer of claim 76, wherein the extended primer has been separated] from the template.

C3  
7  
88. (Thrice Amended) A set of reagents comprising oligonucleotide primers [chemically] covalently coupled to one or more chromophores or fluorophores so as to allow chain extension by a polymerase, and a polymerase.

C4  
98. (Twice Amended) A single-stranded oligonucleotide comprising a first portion and a second portion, [wherein the first portion is tagged with a chromophore or fluorophore so as to allow chain extension, and wherein said first tagged portion is hybridized to a template;

and said first tagged portion is extended so as to create a second portion contiguous with the first]

wherein the first portion comprises an oligonucleotide fragment covalently coupled to a chromophore or fluorophore; and

wherein the second portion is produced by extension of the first portion along a complementary template.

99. (Twice amended) The oligonucleotide of claim 98, wherein the chromophore or fluorophore is [chemically] covalently coupled to the first portion through an amine linkage.

100. (Twice amended) The oligonucleotide of claim 98, wherein the chromophore or fluorophore is [chemically] covalently coupled to the first portion at its 5' end [or in the vicinity thereof].

C5  
101. (Thrice Amended) The duplex of claim 75, prepared by a method comprising:  
hybridizing a primer to a template, wherein the primer is [chemically] covalently  
coupled to a chromophore or fluorophore so as to allow chain extension by a polymerase.

12 11  
102. (Thrice Amended) The duplex of claim 101, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer through an amine linkage.

G5  
conclude

<sup>4</sup>  
~~103.~~ (Thrice amended) The duplex of claim ~~101~~, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer at its 5' end [or in the vicinity thereof].

G6

Sub J47

106. (Four times amended) The oligonucleotide of claim 105, wherein the chromophore or fluorophore is [chemically] covalently coupled to the oligonucleotide through an amine linkage.

107. (Four times amended) The oligonucleotide of claim 105, wherein the chromophore or fluorophore is [chemically] covalently coupled to the oligonucleotide at its 5' end [or in the vicinity thereof].

G7  
Sub J57

111. (Four times amended) The chain termination method of claim 110, wherein the reaction comprises four chain termination DNA sequencing reactions, and the [chemically] covalently coupled oligonucleotides comprising each of the four reactions are distinguishable by spectral characteristics of the chromophore or fluorophore.

G8

Sub J67

118. (Twice amended) The [duplex of claim 75] oligonucleotide of claim 77, wherein the primer is DNA.

119. (Twice amended) The [duplex of claim 75] oligonucleotide of claim 77 wherein the chromophore or fluorophore is detectable by exposure to a high-intensity monochromatic light source.

<sup>1</sup> <sup>2</sup>  
120. (Twice amended) The duplex of [any] either of claims ~~75~~ [to 77] or ~~76~~, wherein the chromophore or fluorophore is detectable by exposure to a laser.

121. (Twice amended) The set of [primers] duplexes of [any] either of claims ~~81~~<sup>4</sup> [to 83] or 82, wherein the primers are DNA.

68 conclude 24 122. (Twice amended) The set of [primers] duplexes of [any] either of claims ~~81~~<sup>4</sup> [to 83] or 82, wherein the chromophore or fluorophore is detectable by exposure to a high-intensity monochromatic light source.

25 123. (Twice amended) The set of [primers] duplexes of [any] either of claims ~~81~~<sup>4</sup> [to] or 82, wherein the chromophore or fluorophore is detectable by exposure to a laser.

69 35 1 2 133. (Amended) The duplex of [any] either of claims ~~75~~ [to 77] or ~~76~~<sup>2</sup>, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer through an amine linkage.

36 4 5 134. (Amended) The set of duplexes of [any] either of claims ~~81~~ [to 83] or 82, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer through an amine linkage.

37 7 135. (Amended) The set of reagents of claim ~~88~~, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer through an amine linkage.

38 1 2 136. (Amended) The duplex of [any] either of claims ~~75~~ [to 77] or ~~76~~<sup>2</sup>, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer at its 5' end[ or in the vicinity thereof].

137. (Amended) The set of duplexes of [any] <sup>4</sup> ~~either~~ of claims <sup>5</sup> ~~81~~ [to 83] ~~or 82~~, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer at its 5' end[ or in the vicinity thereof].

*C9 Conclude* 40 138. (Amended) The set of reagents of claim <sup>7</sup> ~~88~~, wherein the chromophore or fluorophore is [chemically] covalently coupled to the primer at its 5' end[ or in the vicinity thereof].

*G10 Sub 187* [Please enter new claims 139-146, as follows.]

139. (New) The oligonucleotide of claim 77, wherein the chromophore or fluorophore is covalently coupled to the primer through an amine linkage.

140. (New) The oligonucleotide of claim 77, wherein the chromophore or fluorophore is covalently coupled to the primer at its 5' end.

141. (New) The oligonucleotide of claim 77, wherein the chromophore or fluorophore is detectable by exposure to a laser.

142. (New) The set of oligonucleotides of claim 83, wherein the primers are DNA.

143. (New) The set of oligonucleotides of claim 83, wherein the chromophore or fluorophore is detectable by exposure to a high-intensity monochromatic light source.

144. (New) The set of oligonucleotides of claim 83, wherein the chromophore or fluorophore is detectable by exposure to a laser.

145. (New) The set of oligonucleotides of claim 83, wherein the chromophore or fluorophore is covalently coupled to the primer through an amine linkage.

GD  
conclude

146. (New) The set of oligonucleotides of claim 83, wherein the chromophore or fluorophore is covalently coupled to the primer at its 5' end.

### REMARKS

Claims 75-77, 81-83, 88, 98-103, 105-107 and 109-138 were previously pending. Claims 112-117 have been withdrawn as a result of a restriction requirement. By virtue of this response, claims 75-77, 88, 98-103, 106-107, 111, 118-123 and 133-138 have been amended and new claims 139-146 have been added. Accordingly, claims 75-77, 81-83, 88, 98-103, 105-107, 109-111 and 118-146 are currently under consideration. Amendment of the claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. For the Examiner's convenience, a list of the currently pending claims is provided as Appendix A.

The title has been changed to more accurately describe the claimed invention.

#### Concerning 35 U.S.C. § 112, second paragraph

A. Claims 77, 83, 120, 133 and 136 stand rejected as indefinite over the recitation "has been separated." It is stated that it is unclear whether these claims are drawn to an oligonucleotide primer itself or a primer extended and/or hybridized to a template.

In response, claim 77 has been amended to recite a single-stranded oligonucleotide consisting of an extended primer, making it clear that the claim is drawn to an extended primer that is not hybridized to a template. The meaning of claim 83, which is dependent on claim 77, is also clarified by the amendment to claim 77.

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